WHAT IS CLAIMED IS:

1. A method, comprising:

depositing a thin metal film over a substrate;

pressing a patterned die having at least one raised portion and having a metal layer thereover, onto the thin metal film, such that the metal layer over the raised portion of the patterned die contacts portions of the thin metal film over said substrate, and applying sufficient pressure such that the metal layer cold-welds to the thin metal film; and

removing the patterned die, such that the metal layer cold-welded to portions of the thin metal film with which it has contact, detaches from said die and remains in contact with the thin metal film over said substrate in substantially the same pattern as the at least one raised portion of the die, thereby forming a patterned metal layer over said substrate.

2. The method of claim 1, wherein an adhesion-diminishing layer is positioned between the metal layer and the at least one raised portion of said patterned die.

3. The method of claim 2, wherein the strength of adhesion between said organic layer and said thin metal film is greater than the strength of adhesion between said metal layer and said adhesion-diminishing layer.

4. The method of claim 1, wherein a thin organic layer is positioned between the metal layer and the at least one raised portion of said patterned die.

5. The method of claim 4, wherein said thin organic layer is between about 25 and about 100 angstroms thick.

6. The method of claim 4, wherein said thin organic layer is about 50 angstroms thick.

7. The method of claim 4, wherein said thin organic layer comprises Alq3.

8. The method of claim 1, wherein a TEFLON layer is positioned between the metal layer and the at least one raised portion of said patterned die.

9. The method of claim 1, further comprising removing portions of the thin metal film that are not covered by said patterned metal layer after said patterned metal layer is formed over said substrate.

10. The method of claim 9, wherein the portions of the thin metal film that are not covered by the patterned metal layer are removed by sputtering.

11. The method of claim 9, further comprising after removing portions of the thin metal film that are not covered by said patterned metal layer, anisotropic etching the portions of said substrate that are not covered by said patterned metal layer, to form a patterned substrate.

12. The method of claim 11, further comprising removing the patterned metal layer and the remaining portions of the thin metal film from said patterned substrate.

13. The method of claim 1, wherein an organic layer is deposited over said substrate and said thin metal film is deposited over said organic layer.

14. The method of claim 13, wherein said organic layer is a polymer layer.

15. The method of claim 13, further comprising removing portions of the thin metal film that are not covered by said patterned metal layer, and subsequently removing portions of the organic layer that are not covered by said patterned metal layer.

16. The method of claim 15, further comprising anisotropic etching the portions of said substrate that are not covered by said patterned metal layer, to form a patterned substrate.

17. The method of claim 16, further comprising removing the patterned metal layer and the remaining portions of the thin metal film and the organic layer from said patterned substrate.

18. The method of claim 15, wherein the portions of the thin metal film that are not covered by the patterned metal layer are removed by sputtering.

19. The method of claim 15, wherein the portions of the organic layer that are not covered by the patterned metal layer are removed by reactive ion etching.

20. The method of claim 15, wherein the portions of the organic layer that are not covered by the patterned metal layer are removed by reactive ion etching with a combination of CF_4 and O_2.

21. The method of claim 15, wherein the portions of the organic layer that are not covered by the patterned metal layer are removed by reactive ion etching with O_2.

22. The method of claim 1, wherein an adhesion-enhancing layer is deposited over said substrate and said thin metal film is deposited over said adhesion-enhancing layer.

23. The method of claim 22, further comprising removing portions of the thin metal film that are not covered by said patterned metal layer, and subsequently removing portions of the adhesion-enhancing layer that are not covered by said patterned metal layer.

24. The method of claim 1, wherein the patterned die comprises a material selected from the group consisting of silicon, glass, quartz, steel and hard metals.

25. The method of claim 1, wherein the patterned die comprises silicon.

26. The method of claim 1, wherein the patterned die comprises a non-rigid material.

27. The method of claim 1, wherein the metal layer comprises a non-reactive metal.

28. The method of claim 1, wherein the metal layer comprises at least one metal selected from the group consisting of gold and silver.

29. The method of claim 1, wherein the thin metal film comprises a non-reactive metal.

30. The method of claim 1, wherein the thin metal film comprises at least one metal selected from the group consisting of gold and silver.

31. The method of claim 1, wherein the metal layer and the thin metal film comprise the same metal.

32. The method of claim 1, wherein the metal layer and the thin metal film comprise different metals.

33. The method of claim 1, wherein the metal layer comprises at least two layers of metal.

34. The method of claim 1, wherein the patterned metal layer over said substrate has a resolution of about 30 nm.

35. The method of claim 1, wherein said substrate comprises a material selected from the group consisting of polymers, glass and plexiglass.

36. The method of claim 1, wherein said substrate comprises glass.

37. The method of claim 1, wherein said substrate comprises plastic.

38. The method of claim 1, wherein the patterned metal layer over said substrate is an electrode.

39. The method of claim 1, wherein the patterned metal layer over said substrate is an etching mask.

40. A method of patterning a substrate comprising:

depositing an organic layer over a substrate;

depositing a thin metal film over the organic layer;

pressing a patterned die having at least one raised portion and having a metal layer thereover, onto the thin metal film, such that the metal layer over the raised

portion of the patterned die contacts portions of the thin metal film over said substrate, and applying sufficient pressure such that the metal layer cold-welds to the thin metal film;

removing the patterned die, such that the metal layer cold-welded to portions of the thin metal film with which it has contact, detaches from said patterned die and remains in contact with the thin metal film over said substrate in substantially the same pattern as the at least one raised portion of the die, thereby forming a patterned metal layer over said substrate;

removing portions of the thin metal film that are not covered by said patterned metal layer;

removing portions of the organic layer that are not covered by said patterned metal layer;

anisotropic etching the portions of said substrate that are not covered by said patterned metal layer, thereby forming a patterned substrate; and

removing the patterned metal layer and the remaining portions of the thin metal film and the organic layer from said patterned substrate.

41. The method of claim 40, wherein an adhesion-diminishing layer is positioned between the metal layer and the at least one raised portion of said patterned die.

42. The method of claim 41, wherein the strength of adhesion between said organic layer and said thin metal film is greater than the strength of adhesion between said metal layer and said adhesion-diminishing layer.

43. The method of claim 40, wherein a thin organic layer is positioned between the metal layer and the at least one raised portion of said patterned die.

44. The method of claim 43, wherein said thin organic layer is between about 25 and about 100 angstroms thick.

45. The method of claim 43, wherein said thin organic layer is about 50 angstroms thick.

46. The method of claim 43, wherein said thin organic layer comprises Alq3.

47. The method of claim 40, wherein a TEFLON layer is positioned between the metal layer and the at least one raised portion of said patterned die.

48. The method of claim 40, wherein said organic layer over said substrate is a polymer layer.

49. The method of claim 40, wherein the portions of the thin metal film that are not covered by the patterned metal layer are removed by sputtering.

50. The method of claim 40, wherein the portions of the organic layer that are not covered by the patterned metal layer are removed by reactive ion etching.

51. The method of claim 40, wherein the portions of the organic layer that are not covered by the patterned metal layer are removed by reactive ion etching with a combination of CF_4 and O_2.

52. The method of claim 40, wherein the portions of the organic layer that are not covered by the patterned metal layer are removed by reactive ion etching with O_2.

53. The method of claim 40, wherein the patterned die comprises a material selected from the group consisting of silicon, glass, quartz, steel, and hard metals.

54. The method of claim 40, wherein the patterned die comprises silicon.

55. The method of claim 40, wherein the patterned die comprises a non-rigid material.

56. The method of claim 40, wherein the metal layer comprises a non-reactive metal.

57. The method of claim 40, wherein the metal layer comprises at least one metal selected from the group consisting of gold and silver.

58. The method of claim 40, wherein the thin metal film comprises a non-reactive metal.

59. The method of claim 40, wherein the thin metal film comprises at least one metal selected from the group consisting of gold and silver.

60. The method of claim 40, wherein the metal layer and the thin metal film comprise the same metal.

61. The method of claim 40, wherein the metal layer and the thin metal film comprise different metals.

62. The method of claim 40, wherein the metal layer comprises at least two layers of metal.

63. The method of claim 40, wherein the patterned substrate has a resolution of about 30 nm.

64. The method of claim 40, wherein said substrate comprises a material selected from the group consisting of polymers, glass and plexiglass.

65. The method of claim 40, wherein said substrate comprises glass.

66. The method of claim 40, wherein said substrate comprises plastic.

67. An organic device formed using the process of claim 1.

68. A thin film transistor formed using the process of claim 1.

69. A display incorporating a device formed using the process of claim 1.

70. A vehicle incorporating a device formed using the process of claim 1.

71. A television incorporating a device formed using the process of claim 1.

72. A computer incorporating a device formed using the process of claim 1.

73. A printer incorporating a device formed using the process of claim 1.

74. A screen incorporating a device formed using the process of claim 1.

75. A sign incorporating a device formed using the process of claim 1.

76. A telecommunications device formed using the process of claim 1.

77. A telephone incorporating a device formed using the process of claim 1.

78. A display formed using the process of claim 40.

79. A vehicle formed using the process of claim 40.

80. A television formed using the process of claim 40.

81. A computer formed using the process of claim 40

82. A printer formed using the process of claim 40.

83. A screen formed using the process of claim 40.

84. A sign formed using the process of claim 40.

85. A telecommunications device formed using the process of claim 40.

86. A telephone formed using the process of claim 40.